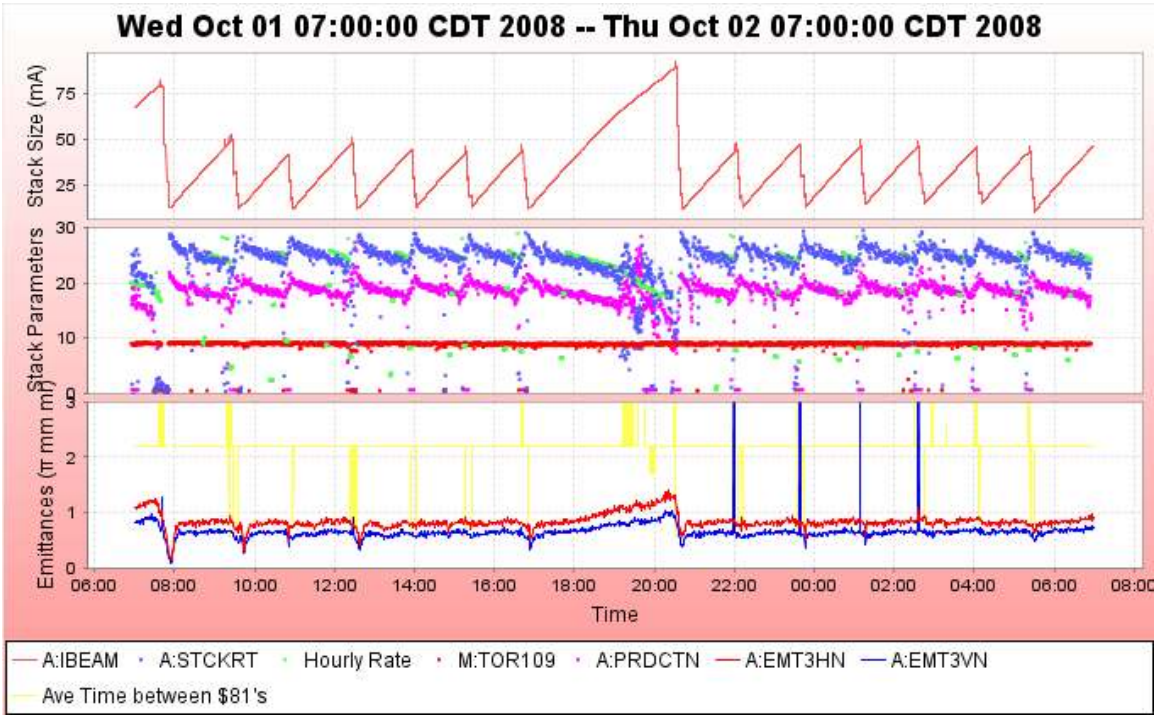
2008-10-02 Thursday Pbar Notes

Wednesday, October 01, 2008
5:00 PM

Stacking

- Performance
  - Best Stacking Hour: 25.29 mA at Wed Oct 01 11:57:38 CDT 2008
  - Average POT : 8.26 E12
  - Average production: 17.62 pbars/E6 protons
- Controls problem:
  - Some TWTs are not being collected by the Datalogger when sampled on event.
    - Found that the three TWT front ends are not getting TCLK and need a reboot to fix.
    - The front ends are TWTDEB, TWTDB2 and TWTACC. Which is all of the Debuncher and all of the Accumulator TWTs.
- Sweeping Manget USB1 bias trip three times.
- Also lost the permit on M:VT101D

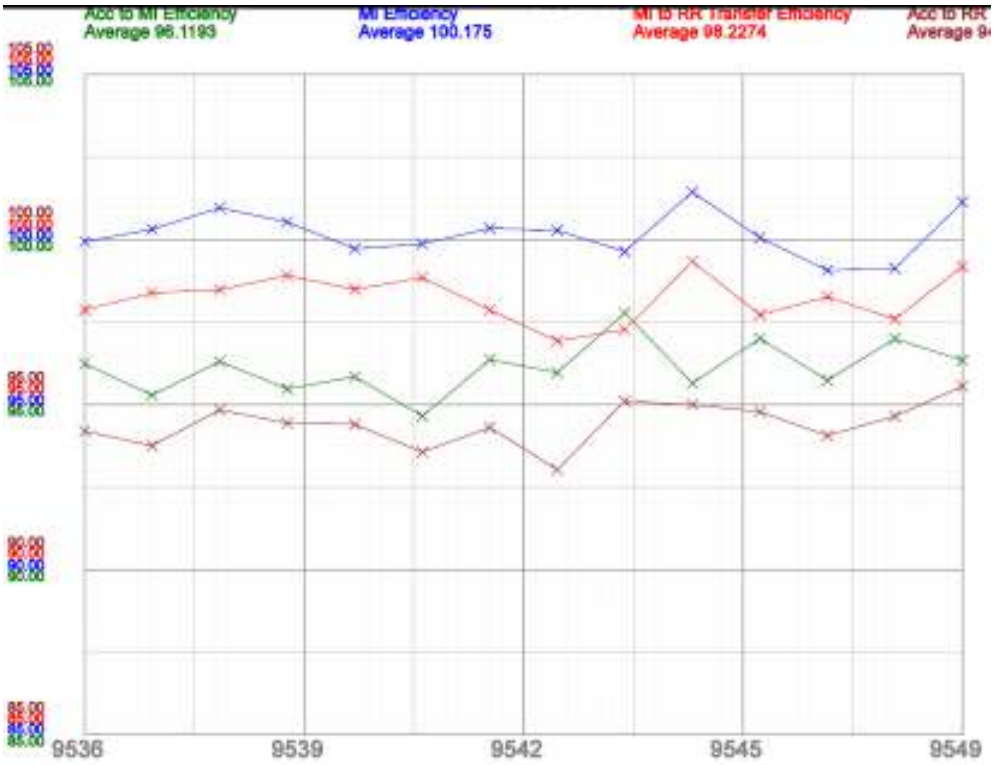


Transfers

- We worked on transfer efficiency:
  - Small energy and phase errors were corrected between Accumulator and MI. The final ARF4 frequency and phase settings are:
    A:RLLEXF = 628764.1 Hz
    A:R4MIPS = -81°
    Pasted from <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=last&frame=2&anchor=&hilite=&load=>
  - Cleaned up the beamline orbit.
- Unstacked 565e10 in 43 transfers over 14 sets.
  - Acc to RR efficiency was 94%

- Acc to MI efficiency was 96%

Column 1 Number _0_Pbar	Column 4 Number_3_Transfer Time		Column 21 Number _20_A:IB	Column 22 Number _21_A:IB	Unstacked (mA)	Column 23 Number _22_R:BE	Column 24 Number _23_R:BE	Stashed	Acc to RR Eff	Column 27 Number_26_MI DCCT	Column 28 Number_27_MI Befor	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets
	Totals =>	7:00:00 AM			565.56			532.24	94.11%	543.42	543.98	96.09%	96.18%	43	14
9549	Thursday, October 02, 2008	5:24:02 AM	43.02	9.95	35.22	244.32	277.67	33.65	95.54%	33.99	34.37	96.49%	97.58%	3	1
9548	Thursday, October 02, 2008	4:04:19 AM	45.42	14.05	33.86	213.52	245.30	32.06	94.68%	32.78	32.50	96.79%	95.96%	3	1
9547	Thursday, October 02, 2008	2:38:00 AM	45.89	14.04	34.46	182.20	214.32	32.38	93.96%	33.10	32.87	96.06%	95.41%	3	1
9546	Thursday, October 02, 2008	1:10:13 AM	45.70	13.85	34.35	150.52	182.85	32.53	94.70%	33.27	33.29	96.85%	96.91%	3	1
9545	Wednesday, October 01, 2008	11:40:13 PM	46.89	12.35	37.00	115.97	150.98	35.15	95.02%	35.48	35.95	95.91%	97.18%	3	1
9544	Wednesday, October 01, 2008	10:05:15 PM	44.15	11.88	34.73	83.44	116.39	33.10	95.30%	33.91	33.75	97.63%	97.18%	3	1
9543	Wednesday, October 01, 2008	8:32:36 PM	88.61	11.08	79.58	11.50	84.08	73.46	92.31%	76.22	76.09	95.79%	95.62%	4	1
9542	Wednesday, October 01, 2008	4:43:41 PM	43.90	11.55	34.75	230.74	263.21	32.84	94.50%	33.51	33.55	96.44%	96.55%	3	1
9541	Wednesday, October 01, 2008	3:18:37 PM	42.76	12.20	33.04	201.23	231.86	30.85	93.39%	31.27	31.27	94.65%	94.65%	3	1
9540	Wednesday, October 01, 2008	1:56:08 PM	43.95	12.34	34.01	170.04	202.02	32.05	94.24%	32.60	32.51	95.88%	95.61%	3	1
9539	Wednesday, October 01, 2008	12:27:03 PM	47.21	11.51	37.56	135.40	170.58	35.39	94.24%	35.85	35.96	95.45%	95.75%	3	1
9538	Wednesday, October 01, 2008	10:50:58 AM	40.92	11.27	32.12	105.55	135.89	30.44	94.78%	30.96	31.26	96.38%	97.33%	3	1
9537	Wednesday, October 01, 2008	9:27:03 AM	48.97	11.70	39.97	68.58	105.87	37.46	93.71%	38.08	38.24	95.27%	95.67%	3	1
9536	Wednesday, October 01, 2008	7:43:50 AM	77.63	12.70	64.93	8.67	69.04	60.88	93.76%	62.42	62.37	96.12%	96.05%	3	1



Studies

- None

Requests

- **Delta Kicker Tuning**: This is a mostly parasitic study that can be done during stacking. Jim Morgan will be the studier and he plans on looking for a time Friday evening to do this study.
- **Core Vertical Transfer Function Measurements**: This is ~15 minutes without

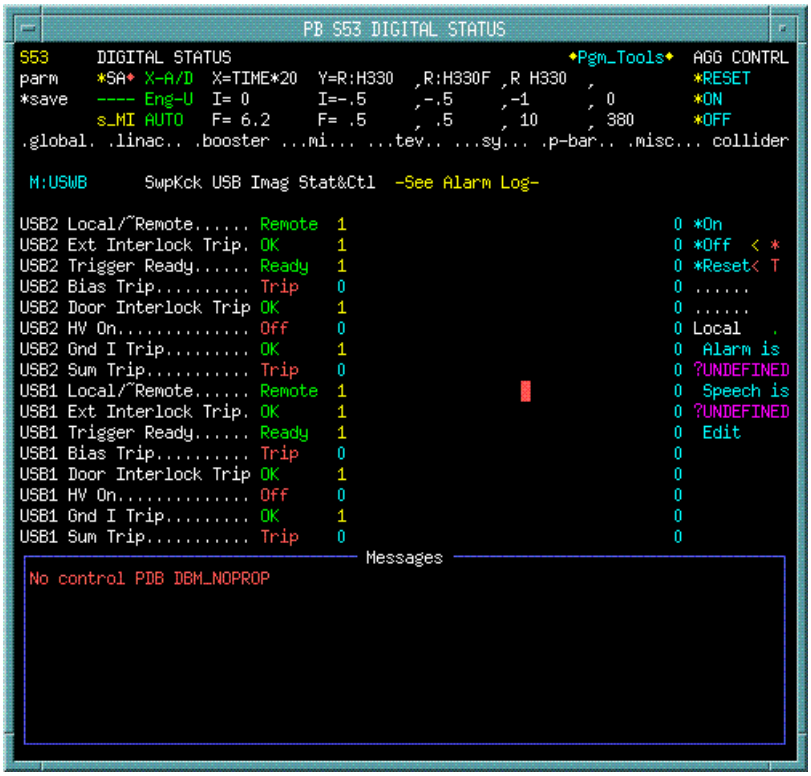
stacking, with any stack size. The studiers will be Ralph and/or Steve. We can look for a naturally occurring period of downtime to do this study.

- **Core Vertical Cooling Studies**: This requires no stacking for 1 to 2 hours, and can be done with whatever beam is leftover after transfers. This study requires turning off core transverse cooling, blowing up the beam and cooling it back down for each band. If naturally occurring downtime long enough to complete this study does not happen before Sunday, then we would shoot to complete this study after the last set of transfers to Recycler on Sunday evening. Ideally the studiers would be Ralph and Steve, but they may not be available on Sunday evening so we may have to find a substitute such as JPM.

The Numbers

- Paul's Numbers
  - Most in an hour: 25.29 mA at Wed Oct 01 11:57:38 CDT 2008
  - Best: 27.01 mA on 03-Jun-08
  - Average Production 14.60 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
  - Average Protons on Target 7.92 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack .00 mA Best: 313.58 mA on 02/18/2008
- Al's Numbers
  - Stacking
    - Pbars stacked: 544.64 E10
    - Time stacking: 23.71 Hr
    - Average stacking rate: 22.97 E10/Hr
  - Uptime
    - Number of pulses while in stacking mode: 38183
    - Number of pulses with beam: 37434
    - Fraction of up pulses was: 98.04%
  - The uptime's effect on the stacking numbers
    - Corrected time stacking: 23.25 Hr
    - Possible average stacking rate: 23.43 E10/Hr
    - Could have stacked: 555.54 E10/Hr
  - Recycler Transfers
    - Pbars sent to the Recycler: 565.56 E10
    - Number of transfers : 43
    - Number of transfer sets: 14
    - Average Number of transfer per set: 3.07
    - Time taken to shoot including reverse proton tuneup: 00.29 Hr
    - Transfer efficiency: 95.59%
  - Other Info
    - Average POT : 8.26 E12
    - Average production: 17.62 pbars/E6 protons
- Manual Best stacking hour run from http://pfdpro.fnal.gov/runRecord.html
  Wed Oct 01 11:57:38 CDT 2008 25.28804740400119

Misc



Pasted from <http://www-bd.fnal.gov/cgi-mcr/elog.pl?nb=2008&action=view&page=-5886&button=yes>